

SEQUOIA NATIONAL PARK

VISITOR EVALUATION

FINAL REPORT

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**Prepared for:
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September, 2004

Acknowledgement

The extensive and complex visitor survey work carried out in connection with this project was ably coordinated and assisted by Malinee Crapsey, Interpretive Specialist, Sequoia and Kings Canyon National Parks. Her dedicated on-site management of both the observational and focus group studies was essential to their proper execution and timely completion. Also playing a key role in this work was Bette Bardeen, who managed and conducted the visitor tracking data collection activities in the Big Trees Trail, the Plaza area and The Giant Forest Museum. My sincere thanks to both of them for a job very well done.

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Introduction

Visitors to the Sequoia National Park have the opportunity to experience firsthand one of the most awe-inspiring sights available anywhere in the natural world – groves of giant sequoia trees. To make this experience accessible, enjoyable and informative, the Park Service has provided three core visitor activities: a walking tour, a museum, and a plaza area. Each of these makes a contribution to the overall experience, adding to the visitor's understanding of the park and its mission. In order to ensure that visitors are able to take full advantage of these activities, both an observational and a focus group study were conducted, the results of which may suggest ways in which the visitor experience could be further enhanced.

This report documents these studies, reporting on the actual behavior of visitors as they explore the three venues (observational study) as well as their personal feelings, opinions, and suggestions related to their experiences (focus group study). The report also includes recommendations for ways that the design and/or content of the three venues might be modified, based on study findings. It is understood that these recommendations will be further discussed with Park personnel to arrive at a “best fit” solution to any problems that may be identified.

(Details of how these studies were designed and planned are contained in a document submitted in June 2004 called the “Evaluation Methodology Plan.”)

Observational Study Big Trees Trail

A total of 191 male and 162 female adult visitors were observed as they moved around the Big Trees Trail on several days in July and August, 2004. Eight out of the 13 waysides placed along the trail were selected for this study. Once a visitor was randomly selected, his or her behavior was observed at the selected wayside and noted on data collection sheets. This behavior was broken down into 5 sub-categories: stopped (waited), passed by, glanced but did not stop, read, and talked. Time estimates at the wayside were also noted: 1-5 sec., 6-20 sec., and 20+ sec. In addition, the gender of the person selected was noted as well as the size and composition of those who were in a group.

The waysides selected for observation in order from the entrance to the Trail are: What Is Good Habitat? (Habitat), Hot Spots (Hot), Sun Worshipers (Sun), Surviving Change (Change), Correct Climate (Climate), Frequent Fire (Fire), From Hurt to Healing (Healing) and A Giant's Footprint (Footprint). (These waysides will be referred to from now on using the words in the parentheses.)

The single most important piece of information about this phase of the study is “How many visitors stopped to read the wayside?” Secondly, “How much time did they spend reading?” Below are listed each wayside along with the total number of observations made (each site is a little different), the percentage of visitors who did at least some reading and the percentage who were estimated to read at least 20 seconds. Also noted are the ranking of each wayside based on these data. Separate data are given for males and females.

It should be noted that even the shortest text (Footprint) takes about 30 seconds to read. The longer ones take much more (over one minute). Thus, we can assume that only those who were “clocked” at 20 seconds plus had the opportunity to read the entire text.

Male data:

		% Read	Rank	% >20 sec.	Rank
Habitat	N=28	50%	4	25%	3
Hot	N=29	45%	5	17%	4
Sun	N=21	43%	6	10%	6
Change	N=22	27%	7	9%	7
Climate	N=20	60%	3	10%	6
Fire	N=21	62%	2	29%	2
Healing	N=28	43%	6	14%	5
Footprint	N=22	73%	1	55%	1

Female data:

		% Read	Rank	% >20 sec.	Rank
Habitat	N=28	59%	4	18%	8
Hot	N=17	66%	2	35%	3
Sun	N=18	61%	3	22%	6
Change	N=19	42%	7	21%	5
Climate	N=21	43%	6	19%	7
Fire	N=20	50%	5	25%	4
Healing	N=15	73%	1	46%	1
Footprint	N=22	66%	2	43%	2

Remembering that the opposite of “Reading” is “Passing, No Glance” or “Glanced, Kept Going”, one has to conclude that, *on average*, about one half of those males observed and 43% of those females observed did not pay any real attention to the waysides. This means, of course, that 50% of the males and 57% of the females did, in fact, appear to do some reading. Taking this one step further, we can say that of those who did at least some reading, 21% of the males and 29% of the females spent at least 20 seconds which

would put them in the class of those who would be expected to actually get at least some of the message contained on the wayside.

These figures correspond to what is referred to in the literature on visitor behavior as *attracting power* and *holding power*. *In that context*, these results are quite good. That is, in most museum settings individual exhibits rarely get an average of half of the visitors to approach them and a fifth of those visitors to spend a reasonable amount of time paying attention to them. However, this comparison is a weak one when one considers the unique environment in which the Sequoia waysides exist. They do not directly compete with each other, they have very high visibility, and they represent an easily accessible opportunity for visitors to get information about what is surely an outstanding visual experience. But, without comparable data from other wayside venues it is difficult to make an informed judgment about whether or not these data represent excellent, good, fair or poor results. When placed in the context of “all waysides,” my own informed guess is that they represent good results. The park service staff at the Sequoia site, however, are in the best position to make this kind of judgment. In any case, the data show that there is clearly room for improvement, and it is in that spirit that the following more detailed analysis is presented.

To this end, one needs to take a more careful look at the individual data from each wayside. Clearly, the averages obscure some real differences, both from wayside to wayside and from male to female. It is here that clues may be found that would account for the differences.

For this purpose the most sensitive data are those that show the percentage of visitors who spent more than 20 seconds reading. These are the waysides that not only *attracted* the visitor but also *held* the visitor. For males the highest score is for Footprint (55%) with Fire a not-too-close second (29%). For females it is Healing (46%) with Footprint a close second (43%). All the other waysides are considerably below these figures, with Change (9%) and Sun (10%) bringing up the low end for males. Females have no real low low, but scatter about in the 18% to 35% range. Footprint, by the way, also has the highest “Talking” rating, with 35% of all sampled visitors being observed as engaging in conversation at that site. No other sites have more than a very few persons noted as “talking.”

One can only speculate as to why the results show these rather large differences. (The data tell us *what* they did, not *why* they did it.) One could hypothesize that there is a human-interest element in those waysides that received the highest reading scores. That would certainly apply to Footprint and to Healing. Some of the lower scorers have some technical information in the text, like Climate (10% for men, 19% for women). The proximity of the actual wayside itself to the things that it is talking about is another factor to consider. Some are “right in front of you” (Footprint) and some are not. The quality of the image itself on the wayside may play a role in these results. It was noted that the weather and sun over time have hazed the plastic covering in some instances, making it more difficult to see the text. It would be informative to correlate this problem with these results to see if there is any connection between the two. Certainly the first step in the design of any exhibit is to be certain that the displayed material is visually accessible to

the visitor. Glare and reflection is another and related problem in the museum setting. I did not notice this in observing the waysides, but it is possible that at certain times of the day the glare of the sun may make it difficult to see the text on some of the waysides.

Finally, it is well known that the writing style, format, total number of words, sentence length, and word difficulty of labels and text in a museum setting are of enormous importance in the reading behavior of visitors. Yet, even within the more “cerebral” museum environment, reading is not a high priority behavior, especially among the younger generation. (Findings reported on later from the focus groups reinforce this notion!) In an outdoor setting where the emphasis is on the flora and fauna, reading would be considered by almost everyone as a secondary behavior. Wayside texts must therefore be very easy to read, formatted for “instant” comprehension, eye-catching and written to the extent possible in a first person, vernacular vocabulary.

The current texts are in general quite good in their use of simple language and the avoidance of complex sentences and technical words. I have singled out a few, however, where I think some changes might lead to a higher level of reading and understanding.

What Is Good Habitat?

This wayside is, in effect, a kind of technical introduction to the entire Trail experience in terms of what to look for and thus deserves special attention. Ideally, it should be read and understood by everyone if they are to get the most out of the rest of their time on the Trail. But, in fact, only 25% of the observed males paid adequate attention to it and 18% of the females, the latter showing the lowest ranking of all the waysides in the study.

The phrase “good habitat” is normally preceded by the words “a” or “the.” This title sounds strange to the ear and may put off the casual or poor reader. The first key sentence is a question, which is good. But it would help the reader focus on this if it were set off in bigger typeface and bold letters. A more personal instruction would be “Look around where these enormous trees grow and see if you can find these answers.” A little simple artwork in the form of question marks or spyglasses would add visual appeal to this area. The list of answers could be set off by bullets thus increasing their recognition value. The final sentence brings up the “process” issue which I find much too abstract to expect the visitor to understand. (I don’t fully understand it myself!) I would be willing to wager that not a single casual visitor is ever going to “watch for evidence of these processes.” (Efforts in the focus groups to tease out a conversation around this topic were totally unsuccessful.) Finally, and most importantly of all, the items in the text do not match the items shown on the visual. They must correspond if you expect the visitor to be able to remember them and look for them. I assume “moist soil” and the image “water” are supposed to match but a stream (picture) and “moist” are not the same thing. In fact, a running stream is what Sequoias do NOT need to survive. “Bare ashy ground” seems to relate to both “fire” and “clear forest floor.” “Open sunny forest” seems to relate to both the “sun” image and the “open canopy” image. What has been created here is a mixture of terms and concepts that will confuse the reader and fail to contribute to his or her understanding.

Surviving Change.

The notion that Sequoias in moist soil develop flared bases is a nice example of adaptation that visitors could apply to trees around the area. It could be given more emphasis by having two small human figures (preferably children) drawn to show one standing with feet apart and the other with feet together. Parents like to have opportunities to interact with their children at exhibits and this could be made into a kind of challenge (“Who is easier to push over?”)

Correct Climate.

The visual could be made more attractive and easier to comprehend by putting the time-line information on the side as a graph. The “Too Cold” layer has too many words in it for the average reader. “This area was covered by a glacier 500 feet thick” would be more likely to be read and remembered. This wayside has no obvious visual referent like the others do. It would help a little if the second paragraph started with “This meadow that you see in front of you...”

From Hurt to Healing.

This potentially high human-interest message could be “punched up” with more “old” visuals to show how bad it really was. The caption for the restaurant seems overly scholarly and not really necessary. The same point is made more directly and simply in the main caption.

The Giant’s Footprint.

“These stones” need to say where they are. I seem to recall that they were behind where one stands to read the wayside. (Several persons in the focus groups said that they did not know they were there or did not know what they represented.)

With the exception of “What Is Good Habitat”, the above suggestions could be considered minor and even “nit picky.” However, it has been shown that what appear to be very minor changes in the content and design of verbal messages can have a noticeable and positive effect on the reading behavior of visitors. I repeat, with the one exception, the waysides selected for this study are well done. However, in the face of so many visitors ignoring them or spending a minimum amount of time with them, one should not pass up any opportunity to make them more “visitor friendly.” (It is recommended that the kinds of suggestions made above should be applied to an examination of the waysides that were not included in this study.)

OBSERVATIONAL STUDY THE PLAZA AREA

The configuration of the Plaza area presents quite a different “picture” than that of the Big Trees Trail. The latter is essentially a linear progression of elements for the visitor to attend to (or not attend to) while the Plaza is a dense and random collection of elements that can be approached from several different entry points. While it is logical to ask whether or not visitors paid attention to all the waysides on the Big Trees Trail since they are “forced” to pass them, it is not logical to ask that kind of question for the Plaza waysides. One can only look at the behavior of visitors as they enter this area from the different vantage points and see if there are patterns of behavior that are consistent.

The main entry point to the Plaza area is the parking lot. The next most common entry point is from the Museum. These are the data that are most closely examined. Because the data from male visitors and female visitors show no significant differences, the following results are for both genders combined.

Parking Lot Entry.

A total of 25 visitors were observed who entered the Plaza area from the parking lot. Of these, 18 (72%) left the Plaza area by entering the Museum main door, 3 the middle door, and one each toward the Big Trees Trail, Beetle Rock, Parking, and Handicapped Parking.

In between these points their behavior is shown in the table below.

Plaza Data, Parking Lot Entry

	Glance/Pass By	% Talk	% Read	% >20 Sec.
G.F. Museum Area Map	0%	12%	12%	8%
Changed Scene	64%	12%	16%	0%
3 Graces	--	--	--	--
Ruler	12%	24%	16%	16%
Climb (#1) Ruler Description	44%	40%	48%	28%
Climb (#2) Ruler Description	4%	0%	0%	0%
G.F. Trails Map	4%	28%	36%	32%
Sentinel (#1)	0%	20%	32%	16%
Sentinel (#2)	8%	0%	0%	0%
Good of the Giants	4%	0%	0%	0%
Trail Center	0%	4%	4%	0%

The general pattern that the typical visitor follows from the parking lot entrance is clearly shown by the results. The G.F. Museum wayside was “used” by only a few visitors (12% Read) even though it is at a point where one enters the area. Similarly, Changed Scene is only passed by or glanced at by most visitors (64%). A few talk and read (12% and 16%) but no one spends more than 20 seconds at this wayside. The 3 Graces was not visited by any of those in the study sample. There seems to be a reluctance to slow down or pause at this point to do any reading as the visitors are heading toward their destination – the Museum.

Once in the Plaza area the many visitors seem willing to engage in other activities that appear interesting. Climb a Sequoia #1 attracts and holds almost half of the visitors. Over 25% spend more than 20 seconds reading at this spot. (The second Climb wayside was “missed” by all those in the sample of visitors.) The first Sentinel wayside and G.F. Trails attracts about one third of the visitors who stop to read. The Ruler attracts 16%, many of whom actually “do” the ruler (mostly children or young adults).

The remaining waysides are, for the most part, not on the most direct path to the museum from the parking lot and therefore score very low on attracting or holding power. These low “scores” should not be looked at as a “defect” or a problem but simply as a function of the layout of the Plaza and how one enters it. This is clearly shown by looking at the results for the 5 persons who entered this area from Beetle Rock. With one exception, all of them clustered at the Ruler and Climb areas before entering the museum. For this reason, the Glance/Pass By results in the table above cannot be interpreted the way they are for the Big Trees Trail, where visitors must pass each wayside on their circuit around the trail. Here, one can completely miss a wayside by not choosing a path that goes near or past it.

Some of these data sheets had “in” and “out” times noted on them – when the visitor entered from the parking lot and when they exited the area. They were recorded as: 2,3,3,9,10,12 minutes. These times include 5 instances in which the visitors used the bathroom facilities. One group was also observed setting up a picnic lunch. The Plaza area lends itself to this kind of self-selected and self-directed behavior (often done in the context of a family group) which is both its real strength and its charm. Watching kids and adults having fun with the ruler and “climbing” the sequoia is a good example of this play-like atmosphere. (64% of the persons observed were members of a group that included one or more children!) In this kind of environment one would be misguided to say what visitors **ought** to or **should** do, or how much time they **should** spend in doing it.

All visitors who enter the museum must exit the museum into the Plaza area, and thus represent what might be called the “second chance” group. Fifteen persons were observed who fall into this category. Nine of them exited the main door of the museum, 2 the middle door and 4 the end door. Three of them exited the Plaza area on the Big

Trees Trail, 6 on the Beetle Rock Trail, 3 to the parking lot, and one each to handicapped parking and the bathroom. One joined a group for a picnic! In terms of what they spent time at, this group followed a pattern very similar to the Beetle Rock group, stopping at the Climb, Ruler, and, to a somewhat lesser extent, the G.F. Trail and Sentinel waysides. Reading time at these sites was very low. It appears from these data that those who leave the museum have someplace to go (in this instance, mostly toward Beetle Rock or parking) and do not want to spend much more time in the Plaza area.

The textual content of the waysides in the Plaza area is uniformly good. The writing is straightforward and in plain English. There is a high level of human-interest value in most of them, particularly in Changed Scene and For the Good of the Giants. But neither of these items got very high attraction or holding power ratings. The latter actually had zero visitor attention from the parking lot and only one person looked at it for less than 5 seconds who came from inside the museum. This may suggest that this wayside be moved to a more accessible location, perhaps as a duplicate somewhere up on the main Plaza area. The images on these waysides are so compelling that it would be worth the effort to bring them to the attention of a higher percentage of visitors.

Observational Study The Museum

A large amount of data were obtained from observing visitors unobtrusively as they moved through the exhibit area in the Museum. Twenty five males and 26 females were tracked, all of them 16 years of age or above. Almost everyone randomly selected for tracking entered the Museum through the main door (88%), the remaining few entering through one of the middle doors. A little over one third of these visitors (37%) exited from the Museum at the main door, 50% from one of the middle doors and the rest through the end door. Clearly, the availability of the middle doors as exit points has an obvious effect on the way visitors moved through and spent their time in the area. However, there is an obvious overall sequence to the order of the stops made by visitors as they moved through the area, following a normal progression from the Map at the entrance door, and ending at the History panel and Video at the back wall.

Some visitors were noted as backtracking through the Museum once they reached or neared the back wall area, often reexamining previous exhibits or stopping at “new” ones. Nine women and 18 men were so observed, with women making a total of 28 revisits to an exhibit and men 54 such revisits. Again, the open middle doors would undoubtedly have an impact on this type of behavior.

The total time spent in the Museum averaged 11 minutes for women and 10.8 for men. Only 7 persons spent more than 20 minutes inside the Museum. However, 14 men and 10 women spent some of that time in the bookstore (all of them less than 10 minutes). Also, 6 men and 4 women spent some time talking to a ranger (no times were recorded for this activity). Since there were 13 exhibit sites at which data were collected, the average times work out to less than a minute per site **not subtracting** the times taken for

the non-exhibit visits to the bookstore and ranger. Given what would have to be the main purpose of visiting the Park (to see the Sequoias!) one cannot say that these time data are unexpected. Looking at the individual times spent at the various exhibit sites (which varied greatly in size and amount of reading material) and the amount of reading time that was observed at each one gives us a more analytical and nuanced picture of where and how visitors spent their time.

Important figures examined in the tables below are the number of visitors who passed within sight of a given exhibit element and the number of that group who stopped to read any of the text material. The latter number is further broken down by the number who read for more than 20 seconds, representing those who were most likely to be reasonably informed by the content of the exhibit. The first figure is comparable to an attracting power measure, given that it represents those that came within sight of the exhibit and who thus might have decided to explore it further. The second figure is a holding power measure – did they approach the exhibit and spend time examining it? The number in parentheses next to the attracting and holding figure is the actual number of persons who spent more than 20 seconds reading at that site. One should “read” the table as “Of the total of 25 female visitors observed, 19 of them passed by or glanced at the Grove exhibit, 15 of whom stopped to read, 12 of whom spent more than 20 seconds reading.” Of course, that means that 3 visitors read some but for less than 20 seconds. Also shown on the table under “No. Used” are the numbers of visitors who used or manipulated the hands-on devices found in four exhibits. These exhibits are identified by a #. Finally, it is important to note those exhibits that contain a large amount of textual material compared to the other exhibits. They are identified by a *.

Separate tables are given for men and women.

Table 1 – Visitor Attracting and Holding Behavior Per Site – Female (N=25)

	<u>No. Attracted</u>		<u>No. Reading (>20 sec.)</u>		<u>No.Used</u>
		<u>%</u>		<u>%</u>	
Grove *	19	76	15 (12)	80	
Fire Scar	19	76	13 (11)	85	
Tree Cross Section #	19	76	15 (6)	40	4
Map	19	76	9 (7)	78	
Greenhouse	18	72	10 (3)	30	
Touch Table #	18	72	6 (4)	67	5
Life Cycle *	17	68	12 (9)	75	
Wheel #	15	60	8 (3)	38	2
G.F. History *	15	60	12 (9)	75	
Land of Giants * #	14	56	10 (5)	50	1
Title & Intro.	9	36	0 (0)	0	
Historic Video	8	33	6 (5)	83	
Muir Quote	4	16	2 (0)	0	

Table 2 – Visitor Attracting and Holding Behavior Per Site – Male (N=26)

	<u>No. Attracted</u>		<u>No. Reading (>20 sec.)</u>		<u>No. Used</u>
		<u>%</u>		<u>%</u>	
Grove *	19	73	12 (9)	75	
Fire Scar	22	85	16 (12)	75	
Tree Cross Section #	21	81	14 (4)	29	3
Map	18	69	14 (9)	64	
Greenhouse	17	65	11 (3)	27	
Touch Table #	16	62	12 (5)	42	8
Life Cycle *	20	77	13 (6)	46	
Wheel #	17	65	6 (2)	33	4
G.F History *	18	69	13 (6)	46	
Land of Giants * #	19	73	15 (5)	33	3
Title & Intro.	11	42	3 (0)	0	
Historic Video	14	54	11 (6)	54	
Muir Quote	4	15	0 (0)	0	

The results shown in the two tables generally confirm the fact that most exhibit elements are passed by or glanced at by most visitors. This is not surprising since the rectangular shape of the area and the ease of moving from one side of the exhibit space to the other would be predicted to produce a fairly even circulation of visitors. There are, however, several exhibit sites that fall short of getting the initial attention of most visitors. For both men and women these include Title & Intro. and Muir Quote. In addition, women score low for Historic Video. No male was seen reading the Muir quote and only 2 women. Certainly, its location is not in the main stream of traffic and thus it would not be expected to get much visitor attention. Only by moving it to where it can be easily seen from the center aisle would it be able to attract more attention. Similarly, the Title & Intro. is also apparently fairly easy to miss as one comes into the Museum. A more visible display with more dramatic lettering and lighting would probably increase both its attraction power and its reading score. Given the few words on this display, however, even with more “pulling power” one would not expect to get more than 5 to 10 seconds of reading time. Of course, this space could be used to make a more substantive statement about the museum experience – what its main message is and what one can learn – in which case an effort to get more visitors to pay attention to it would be worth the effort.

A more refined analysis of these data is shown in the table below. It answers the question, **If** visitors are in the immediate vicinity of an exhibit, how many actually “use” it – i.e., pay some attention to it - and how many of those visitors spend more than 20 seconds at the site? This can best be measured by comparing for each exhibit site the percentage of those in the No. Attracted column who are also in the No. Reading Column

and, of the latter, what percentage are in the >20 seconds column. The table below presents these results, shown separately for men and women.

Table 3 - Percentages of Men and Women Per Site Who Paid Attention and Who Read >20 Sec.

	% Paid Some Attention		% Read >20 Sec.	
	Women	Men	Women	Men
Grove *	79%	63%	80%	75%
Fire Scar	68%	73%	85%	75%
Tree Cross Section #	79%	58%	40%	29%
Map	47%	78%	78%	64%
Greenhouse	56%	65%	30%	27%
Touch Table #	33%	75%	67%	42%
Life Cycle *	71%	65%	75%	46%
Wheel #	53%	35%	38%	33%
G.F History *	80%	72%	75%	46%
Land of Giants * #	71%	79%	50%	33%
Title & Intro.	0%	27%	0%	0%
Historic Video	75%	79%	83%	55%
Muir Quote	50%	0%	0%	0%
Average	58.6%	59.0%	53.9%	40.4%

Table 3 allows one to concentrate on the performance of the exhibit site independent of the number of visitors who were initially attracted to it. For example, although only 4 women were within sight of the Muir message (Table 1), of those 4, 50% of them paid some attention to it, although 0% spent more than 20 seconds at the task.

The overall averages given in Table 3 show a rather high percentage of both men and women paying some attention to the exhibit sites and spending a reasonable amount of time at each site. However, there are rather important differences that are masked by these averages. Using cutoff figures that separate the high percentages from medium and low percentages, one can see that some of the sites are much more likely than others to get the attention of men or women, and much more likely to sustain that attention. A reasonable division for this purpose would be 70% and above as representing very good performance, 40% to 70% as representing moderate performance and below 40% as representing weak performance.

Those exhibits falling into the latter (weak) category represent those that should be given first consideration for some kind of remediation. Of course, their relative contribution to the overall message of the Museum would play a role in deciding whether or not such

remediation is desirable. Cost for such work would also play a role in this decision-making process. However, the data are presented here for examination and reflection. Below are listed those exhibits that fall into the “weak performance” category for either men or women broken down by Paying Attention and Reading. Those elements that have relatively large amounts of reading material (*) and hands-on activities (#) are so designated.

Weak Performing Exhibit Elements – Paying Some Attention:

- Touch Table (Women) #
- Wheel (Men) #
- Title & Intro (Both)
- Muir Quote (Men)

Weak Performing Exhibit Elements – Reading

- Tree Cross Section (Both) #
- Greenhouse (Both)
- Wheel (Both) #
- Land of Giants (Men) * #
- Title & Intro (Both)
- Muir Quote (Both)

It is interesting to note that all four of those exhibits that have some hands-on activity are represented in this “weak” category. While the Wheel shows up in both the “Paying Attention” (for men) and the “Reading” breakdowns (both men & women), this is somewhat misleading since this particular interactive can be used by a group, and was frequently so observed. It is still the case, however, that while it is being used by an individual or a group, it is not available to others who do not want to wait and just pass it by. Also worthy of note is that only one of the 4 exhibits that have a lot of reading material shows up in this analysis – Land of Giants for men. The other exhibits in this category have limited content and text and so would not be expected to have high scores, especially for “Reading.”

A secondary level of analysis looks at those exhibit elements that are in the “moderate” range (40% to 70%). They are:

Moderate Performing Exhibit Elements – Paying Some Attention

- Grove (Men) *
- Fire Scar (Women)
- Tree Cross Section (Men) #
- Map (Women)
- Greenhouse (Men & Women)
- Life Cycle (Men) *

- Wheel (Women) #
- Muir Quote (Women)

Moderate Performing Exhibit Elements – Reading

- Map (Men)
- Touch Table (Men & Women) #
- Life Cycle (Men) *
- G. F. History (Men) *
- Land of Giants (Women) * #
- Historic Video (Men)

While representing a less pronounced lack of attention and reading behavior, this moderate group nevertheless has all of the exhibits with large amounts of reading material for either men or women that were not already in the “weak” category. Ways to make these exhibits more “reader friendly” should be considered.

For comparison purposes, the following represent those exhibit elements that have high rankings (70% +):

High Performing Exhibit Elements – Paying Some Attention

- Grove (Women) *
- Fire Scar (Men)
- Tree Cross Section (Women) #
- Map (Men)
- Touch Table (Men) #
- Life Cycle (Women) *
- G.F. History (Men & Women)
- Land of the Giants (Men & Women) * #
- Historic Video (Men & Women)

High Performing Exhibit Elements – Reading

- Grove (Men & Women) *
- Fire Scar (Men & Women)
- Map (Women)
- Life Cycle (Women) *
- G. F. History (Women) *
- Historic Video (Women)

The above data can be looked at in many ways, using different frames of reference. However, one can assume that in at least two cases, there is ample evidence to support an effort to up-grade the “performance” of the average visitor. One is in increasing both Paying Attention and Reading behavior for those exhibits that have a lot of text and the

other is to increase the use of the hands-on materials. The former will help to insure that the main messages are communicated to the average visitor, young or old, and the latter represent potentially high interest activities that have been shown have very high attraction and performance levels in other exhibit settings *when they are properly designed*.

Low label-reading behavior in the museum setting is one of the most consistent findings from the hundreds of visitor studies done. Too many details and secondary levels of information turn off all but the most dedicated visitor. This is especially true of the younger population, as we heard expressed in our own focus group. (It has gotten to the point where children in science centers will ignore non-hands-on exhibits almost completely and spend the majority of their time with those exhibits they can manipulate. Thus, almost all exhibits in these institutions are interactive!)

A proven way to get higher and *more focused* adult reading behavior is to make the main idea or ideas (not too many!) stand out even to the visitor who just takes a quick look at the display (the less than 20 seconds group). High contrast and colorful type set off in a distinctive space usually gets higher attention. (The headline in a newspaper has often been used as an analogy.) The use of questions and humor is often found to result in higher visitor attention, as is a message that addresses the visitor directly. The content of many of the primary text materials in the Museum use some of these techniques, but their visibility and clarity of message could be enhanced to get more visitor attention and a more focused message across.

An example: The Title & Intro display has a very low score for both men and women and yet could lend itself to playing a more important role in orienting the visitor to the rest of the Museum. (This orientation function has been shown to make a big difference in how visitors “use” their time in the remaining exhibit areas.) The main message of the museum (as I understand it) could be displayed on a stylized and colorful map of the world along with the statement, **“This is the only place in the whole world where Sequoias can grow. Find out why! And How to Protect Them!”** For added visual impact, this statement could be printed (or carved) on a real wooden sign that is stuck in the world map at the location of the Park. I feel confident that the attention of visitors to this area would be increased dramatically and that their expectations with regard to what they are about to experience in the Museum itself would be more focused on the actual intended messages.

The interactives are not getting the attention they deserve. Only 7 persons were seen using the Tree Cross Section interactive, 6 the Wheel, and 4 the Land of Giants (see Tables 1 and 2). The Touch Table had 13 users, but watching them at the site indicates that they did not, for the most part, actually use the materials properly and did not understand what it was they were supposed to be finding out. The questions asked are very difficult to answer and I do not believe that the answers are provided so users can “check” their work. This suggests that a flip panel be incorporated into the display with the correct answers. Also, the instructions need to be more explicit by stating in bold lettering “What to do,” “What to Observe,” and “What It Means.” This formula has been

used at the Exploratorium in San Francisco for many years (they “invented” and refined the hands-on exhibit idea) and has been found to be the best way to get visitors to go through the proper steps.

The slide panels used in the Land of Giants display also got very little use. The instructions need to be explicit – **“See if you can answer these questions. Then slide the panel down to see if you were right.”** Cartoon-like drawings would help to give the area more visual appeal to children.

This completes the analysis of data from the Observational Study. Some suggestions have been offered (some by way of examples) to show how the data collected can lead to specific areas where changes would be likely to overcome or reduce some of the identified weaknesses. **However, it needs to be emphasized that, given the overall content and settings of the three venues used in this study, the attracting and holding power of their various exhibit elements are quite good overall.** The focus group results will add a useful qualitative dimension to the above findings.

Focus Group Study

A total of 8 focus groups were conducted over a two-day period—weekdays in August 2004. Adult visitors were randomly approached near an exit to the Great Forest Museum area and asked if they would be willing to spend approximately 45 minutes talking about their experiences in there. If they agreed, they were further asked if they had visited the three venues that were the subject of the study: The Big Trees Trail, the Plaza area and The Giant Forest Museum. Qualified groups were then taken to the Beetle Rock Education Center where the sessions were held.

It was originally intended to conduct 6 Focus Groups with up to 15 persons in each group. However, due to the small number of Park visitors during much of the recruiting time, it was decided to accept a larger number of smaller groups. A total of 39 adults or young adults and 8 children comprised the 8 groups:

- Group 1 - 7 adults, 2 children
- Group 2 - 6 adults
- Group 3 - 2 adults, 1 child (from England)
- Group 4 - 2 adults, 1 child
- Group 5 - 6 adults
- Group 6 - 5 young adults
- Group 7 - 6 adults, 2 children (Hispanic)
- Group 8 - 5 adults, 2 children

The Hispanic group was recruited separately. They were contacted in a nearby campground and asked to participate. The remaining groups did not know that they would be part of the study until they had completed their visit. In several instances new volunteers were brought into the group after the session had started. Every effort was

made to work them into the discussion without interfering too much with what had been covered.

The Protocol that was used to guide the Focus Group discussions is attached to this report as Appendix A. All sessions were recorded on audiotape. All groups included both men and women. In general, participation of all adult group members was reasonably well distributed.

Only the salient comments that were made by each group will be noted. In keeping with the overall purpose of the entire study, emphasis will be given to those observations and comments that have implications for ways that the visitor experience could be enhanced.

Group 1

Two families, one from Miami, FL and one from Visalia, CA. The latter group had been to the Park 10 years earlier. They were very complimentary of the changes that have been made since their earlier visit ("Vast improvement"). In terms of wayfinding neither group had any problem finding their way around. "The maps were very clear." Both spent about 15 or 20 minutes in the Museum. A new family joined the session at this point. They only spent "a few minutes" in the Museum. Most everyone said that they used the Wheel in the Museum and enjoyed it. Two of them were able to state what the purpose of the Wheel was. The role of fire in the life of the Sequoias was well understood, as was the notion of habitat. In terms of doing the Museum or the outside areas first, the vote was "Either one – it makes no difference." Everyone in this group was very positive with respect to the restoration of the Park and "saving" it from commercial exploitation. They all would recommend the Park to their friends and would like to come back sometime in the future. (As this group was leaving one of the young people said he thought that there could be more signage on The Big Trees Trail. It was not clear why he thought this.)

Group 2

Man and wife from New York City and 4 people from Los Angeles. The latter had been to the Park 5 years ago. The main message that one person got from the overall experience was the danger that the Sequoia trees are in. Others agreed. The issue of crowding came up. Some thought that it was "too crowded" but to others the Park was seen as less crowded than some other National Park areas like Yosemite. "Lack of people" was seen as one of its advantages over other Parks. No problem with finding their way around. The maps worked very well. "There is nothing that gives you a good background of the Park and what things to see before you get here." (This comment had to do with information available before one gets to the Park itself, including road signs. There was some support for this observation.) Exhibits in the Museum that were specifically mentioned included "In The Land Of The Giants" where you could make comparisons and the videos of what it used to look like in the Park before restoration. One person noted the Grove exhibit as being interesting in that it showed the location of all the places where Sequoias grow. One person thought there was "Too much bear

warning.” No support for this notion. “It really helps to see the real things out on the Trail after you learn about Sequoias in the Museum. One complements the other. One is specific and the other is more general.” For this reason, the group felt that it would be better to go to the Museum first before going out on the Trail. The NY couple was surprised to learn that fire is a natural part of the life cycle of the Sequoias. They always thought that fire is only a bad thing. The terms “Controlled” and “Prescribed” fire were new and surprising to them. Many comments from all members of the group around the issues of habitat and fire showed a high level of knowledge of these terms and how they relate to the development and survival of Sequoias. The group also got the message that the area was exploited by commercial development years ago and that it is a good thing that the area was restored to its natural state. “You come up here to get away from things like that.” “We should be much more conservation conscious.” “Their motto is ‘No tree left behind.’ ” Everyone would highly recommend that their friends come to see the Park.

It is worth noting that the couple from NY City represents a clear and positive example of the power of the experience they had in the Park to dramatically change their perception of the role of fire in the life cycle and management of Sequoias. We are always looking for those unambiguous cases where before the Museum experience a person thought “A” but afterwards they thought “B” where the two are at rather extreme ends of a belief system. Equally dramatic was the amount of knowledge about the habitat required for Sequoias to survive that was demonstrated by their comments. One would have to say on the basis of this particular group that the total Park experience is capable of conveying important information to those who take the time to attend to its various elements. This is something that cannot be so clearly said very often about other similar venues that have been studied!

Group 3

An English couple and their young child (8 or 9). Had been to the Park 10 years ago. Came back so their son could see it. No problem with finding their way around. Used map on the kiosk to find out how to get to the Big Trees Trail. They think that it is better to go to the Museum before going out on the Trail. Read all but a few of the waysides on the Trail. Found them helpful. The male said that there could be more information about the wildlife. (An interesting point. I don’t remember seeing much out on the Trail about the fauna. One could imagine a separate wayside devoted to this subject.) Liked looking at the tree rings in the Museum. Played the Wheel – said that they “cheated.” Also liked the “Land of Giants” exhibit where you could make comparisons. Thought that there should be more explanation of the Fire video, especially for children. “Not sure they would know what is going on.” (I had a similar reaction. Without a narrative or more descriptive text before you go in, one might misinterpret the video as just showing a destructive fire.) The child knew that fire helps open the cones to disperse the seeds. However, he said that he knew that **before** he came to the Park! This, of course, is one of the problems with interpreting the results from visitor studies in general. It is certainly true that the level of prior knowledge would be expected to be quite high in the population that comes to visit natural environments like this one. Without giving some

kind of a pre-test, one cannot be sure that the information one gets is not from earlier learning experiences. (This is not the case, however, for the NY couple. I believe them when they say that they knew nothing about the beneficial effects of fire before coming to the Park.)

Group 4

Two adults and a young grandchild. Had been to the Park before. (Did not get their hometown on tape.) They agreed to participate because the young boy wanted to do it. He did a lot of the talking. Had trouble with the road signs getting to the Park. Missed some of the road signs. Not very helpful in general. “Local” signs in the Park itself were OK. The Museum displays were “very good.” The boy said the Museum was “cool.” He liked the Wheel a lot. He also had a pretty good grasp of the role of fire in the life of the Sequoia. He did not know the effect of fire on the cones. The grandfather mentioned the openness of the Museum space as a positive feature. The grandmother liked the Ruler out on the Plaza. They enjoyed using it. When asked about the waysides along the Trail the boy said he read them and they said “Keep off the Grass.” However, the man noted in particular the wayside that talked about the way the Sequoias only grow around the edges of the meadow and not inside it. When asked what Sequoias need to grow the young boy said “water, sunlight and dirt.” The negative impact of air pollution on the survival of the trees was noted by the man (they saw it from Moro Rock).

This family group represents a model of how visits to Park areas can be used as a teaching tool for young children. These two grandparents have taken their grandson to other National Parks as a learning opportunity and part of his overall education. They actually do readings before their trips as preparation. It seems clear from their comments and especially the comments of the young boy (and the fact that they came back) that the Sequoia National Park fulfills this role very nicely with its Museum and its outdoor features. Their comments also support the way that the “inside” and “outside” experiences complement each other in a symbiotic way making the learning experience that much richer and more effective. (This information was gotten from chatting with the grandparents after the taping was completed.)

Group 5

Six persons in this group, a father and son from Nevada and 4 adults from North Carolina. The man from Nevada was an engineer who worked at the Hoover Dam. He also worked for the Forest Service for many years! All first time visitors. The NC group missed the parking lot and had to go down the hill, turn around and come back. I know this is not within the purview of the study, but poor road signage is an issue that has come up so often that I thought it was worth mentioning. Wayfinding within the Giant Forest area was good. The NC group noted that the information about how long it would take to do the Big Trees Trail was misleading. It took much less time than indicated (1.5 hours). Perhaps this message needs to give a range of times. It sounds like they almost decided not to go on the Trail because they thought it would take too long. This would be unfortunate if it influenced visitors this way! (My informal observations are that most

people take much less time than 1.5 hours to make the circuit – unless there are bears in sight.) Both groups used maps and the kiosk for help in finding their way around. “It was good to have the mileage for the various walks.” Finding how to get to the Trail was easy – “Nice big sign.” The waysides were “Informative and excellent – really excellent.” The Hoover Dam man said that there might be “more text” on the waysides. He mentioned the little pine cones molded on the waysides – “They are really nice.” He also brought up the issue of how much there is for those who are vision impaired. He felt that more could be done to help them get a sense of the size of the trees. A tape-recorded tour of the meadow area would also be helpful for them. He liked the Ruler because it would give even the vision impaired person some idea of the height of the trees. (He is responsible for the visitor center at Hoover Dam and seems to be “up” on many of the issues relative to visitor services.) The NC group thought that the Footprint wayside of the twin trees (Ed by Ned) could be built up a little bit so those who could not see it could feel its shape and size with their feet. Both groups spent about 15 minutes in the Museum. The Hoover man said he already knew most of “that stuff.” (Remember – Forest Service.) He was impressed by the tree ring display. Liked to feel them. The other group liked the pictures of what it used to look like. Would like to see more on that subject. Also the Wheel. They played it a little and watched others use it. Liked the comparison of the size of the Sequoias to the Statue of Liberty. They also think that it is better to see the Museum first so you can learn something before you go out to see it. “Some people only want to see something – I want to learn something.” The habitat notion came through to the NC group. Liked the exhibit that talked about climate, temperature, sunlight and altitude as those things that restrict the range of the Sequoias. Mr. Hoover thought that an interactive display could be made out of this notion of having just the right mixture of things – the visitor could add or subtract elements of temperature, altitude, sunlight, etc. and the range would expand or contract as a result. Sounds like an interesting possibility but also an expensive one. He also wanted more weather information – the highs and lows of rain, snowfall especially. The idea of having a special tree that you could walk up to and feel was noted. This would satisfy that natural urge to touch them and make it less likely that people (especially children) would get off the trail to do so.

Group 6

Five young (late teens or early 20s) adults, one female. From Orange County. No problem with finding their way around. On the Trail they read some of the waysides but passed by others. In the Museum they liked the Wheel. Played it but did not win. Also mentioned was the display that showed the roots (Death of a Giant). They said that they already knew about the beneficial effects of fire. Watched the Fire Scar video. They liked the Ruler and walked down the entire length. One of them made a rather strong statement about his dislike of label reading. He likes exhibits that you can do things with. The group seemed to support him on this point. (This kind of comment supports some of the finding of the Observational study in terms of time spent reading. It also supports the many studies done in museums that show a strong disinclination of young visitors to do much reading.) They used the maps provided to help them find their way around. Found especially useful the information about how long the trails were so they could decide

whether or not to use them. They all thought that it is better to go through the Museum first before going out on the Trail. “You know more about what you are seeing.” They really liked the two trees that grew together (“It was really cool”) but seemed to have trouble finding the “signs” that told them about it. By the time they found the appropriate wayside “they forgot about it.” They missed the “footprint” altogether. “Maybe if they had something like a big stump it would be more obvious.” (This area seems to be worth a closer look to see if it could be better designed for visitor use.) They were taking lots of pictures and wanted to get one of the group standing around the base of a tree. Were disappointed that they could not do this. Again brings up the notion of having a “picture taking/touch tree.” They seemed to be in agreement that the restoration of the area was a good thing. Commercialism has no place – “No hotdog stands along the Trail!” They mentioned the pipes on the ground that you see in various places and wondered what they were for. It might be a good idea to have a sign at these points that explains that this is a temporary part of the restoration process (irrigation?). I thought they were an ugly distraction myself, and would have been pleased to know that they were there for a good purpose. As a final comment one of the lads said “I think the Trail was well done – it’s really nice.”

Group 7

Eight Hispanics, 6 adults and one young girl and young boy. This was the adult’s second visit (were here 15 years ago). “Of all the Park Service parks that I have been to this is the best organized one that I have seen so far.” “The maps were easy to use and everyone at the Visitor Center was very helpful and explained everything.” They agreed that it would be helpful if the text materials were in Spanish but they also noted that the Rangers they talked to spoke Spanish. With one exception, all of these people seemed to speak English quite well, and, I assume, could also read English. The thing that impressed one of the members of the group were the comparisons of the height of the trees with other things, like a football field. Also, the Ruler outside the Museum was very effective. “I started to walk it but did not finish - I got tired.” They also liked the Fire video in the Museum. There seemed to be some ambiguity about the role of fire. Some noted positive things like clearing the undergrowth but others seemed reluctant to say that fire can be good. They had no notion about the effect of fire on the cones. The children used the Wheel and had fun with it. It was not possible to get them to explain what the message of the wheel is. This is not to say they did not know it. Youngsters of this ethnic group tend to defer to their elders. Spent 10 minutes in the Museum “at most.” One of the young men in the group who had not been to the Park before made a nice statement about learning how fragile the Sequoias are and why you should not walk on their root system. “Give vegetation a chance” signs impressed him. I tried again to get the two young people to talk about their experience but got only short answers (“fine, good, liked it”).

There was an impromptu but important discussion after the session ended on the subject of Spanish language materials. Since there was a lot of simultaneous talking going on at this time it is hard to hear what was said, but it appears there is a handout in Spanish that is available if one asks for it. However, there is no sign at the entrance to the Museum

that informs visitors of this. Another point was how helpful it would be to have a page or two of translations in Spanish of the exhibit text material (or at least some of it) that one could take around with them as they toured the Museum. Several “that would be good” comments were heard on the tape. (Sorry I do not have a better record of this discussion. Malinee was involved in it and may have a better recollection of it.)

Group 8

Three adults and one child from San Diego. They had been to the Museum the day before and came back to go to the Trail. After they parked they were not sure which side of the road to take to get there. They found out how to get there by going to the Museum area and looking at a map. They were almost put off by the time required to do the Trail. This appears to be a potential problem for those who are on a tight schedule. They found the waysides on the Trail very helpful. They had a specific question in mind and found the answer on one of them (Why do the Sequoias not have lower branches?) They also learned about the way the root systems interlock with other trees. (Three more joined the group at this point - 2 adults, 1 child.) There was a problem with a display in the Museum that asked a question but there was no answer given. They went to ask a staff person who told them to ask the Ranger for the answer but he did not know either. I found out later when I went back to the Museum that this was a temporary sign that is put up by the staff. Not sure if the answer is supposed to be near the sign or if it should say “See the Ranger,” or what. There needs to be some better coordination on this activity. The general idea is good but not when it leads to unanswered questions on the part of visitors (not to mention a negative image of those in charge). The amount of destruction of the area by local business establishments in the past was noted as something they did not know before. They approved of getting rid of these elements and returning to the natural environment. Also the role of fire was new to them. Some of them used the Wheel. The notion that there should be more interactive displays and less reading material was brought out. “It would be more interesting to kids rather than reading.” Another point that was made – People who do not speak English would get more out of an interactive or visual type of display where the story is told without words. (One could see this done very nicely by a series of pictures showing how fire pops open the seed cones, leading to new growth.) “The signs out on the Trail are in the right place, right where you can see what they talk about.” Here is a new thought - One group was upset because they had no money with them and then found out there was a gift shop. “We had to go all the way back to the car to get some money.” They think that the outside sign should say “Museum and Gift Shop.” The group was good in noting the various conditions that Sequoias need to grow – the habitat notion.

Post Focus Group Discussion

Members of the project team participated in a de-briefing session following the last Focus Group session. The visitor recruiting team picked up a number of worthwhile comments in their interaction with visitors:

- Locating the parking is a real problem. Several people parked away from the parking lot. “We didn’t even know this big parking lot was here.”
- Some did not know about the Big Trees Trail until they got to the Museum and found out about it.
- Several people were heading up toward Beetle Rock and asked, “Where is the Museum?” Another group following them was also looking for the Museum. “We were sort of wandering around.”
- A lot of people wanted more interactives – more touchy-feely things. Also, the visually impaired would benefit from an audio system especially for the Waysides but for the Museum as well.
- People are walking right past the “Do Not Walk” signs and picking up cones. The fencing is not doing the job. People want to touch and take photos. When they see others do it they figure they can do it too. (Extended discussion around this issue.)
- A “huge” number of people in the Park are foreigners.
- Everyone is having a great time. They love the Ruler.
- Extended discussion of the restoration idea. Don’t want to romanticize the past but need to get the message over that major changes for the better have taken place.
- The pipes along the ground at various places were noted as a source of curiosity. Need to be “explained” somewhere – probably in the Museum. (Putting such a sign where the pipes are would have a much greater impact.)

Some additional and more general comments were made in the follow-up discussion:

- There are materials available in other languages stuck back in the corner. “I didn’t see anybody ask for them. They should be somewhere where people can see them.” There needs to be a sign saying they are available for the asking (not out where they can be taken). (*Of course that sign needs to be in the various languages that are available!*)
- There needs to be more information available at the campgrounds about the Museum, etc.
- An extended comment was made on the unique character of the Park as a day use facility. It was “designed” that way, but it is clear that it is being used that way. I noted that everything that was learned from this study is consistent with this

notion. It is clearly seen by visitors as a place to spend several very enjoyable and informative hours and then move on.

- A final discussion centered around the use of the Big Trees Trail. “It was one of the main objectives of this Park to get people out of the Museum and on to the Trail. Clearly that is not happening to the extent desired.” I noted that the results of both the Observational and the Focus Group studies should be able to shed some light on this issue.

Final Comments

The results reported on above generally project a very positive image of the visitor experience in all three of the venues that were studied. Visitors not only expressed their pleasure and enjoyment verbally in the Focus Groups but “physically” in the Observational study. People came to the Park to have a good time, and they were having it! In fact, this positive mindset made it difficult in the Focus Groups to explore those areas that may have been problematic. Visitors had to be “encouraged” to be at all critical.

It also needs to be said that most visitors appeared to gain a good deal of new information from their time in the Park. This is clearly shown in the Focus Group results where they demonstrated their ability to articulate many of the major points and concepts that are contained in the various displays and exhibits. Questions about habitat, fire, restoration, Sequoia characteristics, as well as Park philosophy, were always answered with substantive (if not always complete) comments.

Having said this (and it is something that cannot be said of many similar venues), there are, nevertheless, a number of “soft spots” that revealed themselves in the analysis of the results. They have been noted throughout the report as candidates for some type of remediation. Most of them came out of the actual tracking data that has the benefit of being un-contaminated by personal positive feelings. However, even in the Focus Groups, there were a number of issues raised that could also be looked at as possible areas that need some kind of “fix.” Strengthening these findings is the fact that many of the points found in the “hard” data from the Observational study are also reflected and reinforced in the comments made in the Focus Groups.

In terms of saying what are the most important or most critical areas that should be considered for some kind of remedial efforts, I defer to those who have to balance what may be done with what can be done. My personal bias would be to concentrate on text material: wayside, exhibit text and hands-on exhibits. Making these materials more readable, understandable, visible and interesting would help to increase the low reading times for many of them. There are also related language issues that came out of the discussion with the Hispanic group. Should they have their own text material? Wayfinding problems were noted only a few times (most everyone said “No problem”) but it may be a more critical issue than is revealed in this study. After all, it is clear that

there are almost always many more people in the Museum and Plaza areas than there are on the Trail. Several good “hints” as to why this may be so are noted in the results write-up. The failure of signage on the highway to clearly notify people of what is ahead and where to park is a significant deterrent to effective use of the museum. The problem several groups had with finding the parking lot could be considered as something to take a look at. How many people who want to come to the Park never get there because they can’t find or simply miss the parking lot? The general issue of making the Museum exhibits more attractive and accessible to young people could also be a worthwhile area to consider. The message was loud and clear from the Focus Group of young persons – more interactives and less reading. However, interactives tend to be expensive and therefore may not “make the cut” when it comes to allocating limited resources for change.

In conclusion, there is a lot of “food for thought” in the results presented above. It remains for those who have the resources to make changes to decide where and how to make them. Whatever is decided, what is already a very excellent visitor experience will be made an even better one.

Appendix

Comments by Bette Barden, Lead Park Volunteer for Observational Study

I have a few comments on Dr. Shettel's conclusions, based on the behavior I observed. First, he mentioned that there was little talking at the exhibits on the Big Trees Trail. As we had discussed, we were so far away from some of the observation points that we could not tell if people were talking or not at a number of them. However, it is certainly true that most visitors on the Trail did not spend a great deal of the time with the exhibits. Similarly, it was hard to see if people were talking at the Giant Forest wayside observed from the Plaza area. Not all visitors had to pass this exhibit, as many entered or exited from the end of the parking lot near Beetle Rock. Most people in the Plaza area looked at the two signs directly in their path on the way to the museum, and then entered the museum. I do not think there is anything wrong with that. One thing I did find interesting was how few visitors leaving the museum headed for the trails - I would have expected more to do so. As to the use of exhibits within the museum, since we tracked adults the findings did not reflect the use by children in those groups. Virtually all the kids tried the wheel, and most adults with children left that to them. I did think it was interesting that almost no one looked at the Title and Introduction - it might be a good idea to consider changing that. Our observation of the Muir Quote and To the Trails sign was probably not 100% accurate - we were trying to be unobtrusive and you could see other exhibits at that end of the museum from a distance. However, the fact that almost no one left through that door does suggest the sign was not noticed. Certainly no one spent much time there. One factor that cannot be taken into consideration in this evaluation is the effect of others in the group of the observed person. Often someone who appeared interested would be called away by the rest of their group.

Since we didn't observe children, I'll throw in a few observations - small children liked the Fire Scar Theater (and the money box!); older children especially liked the Wheel. Personally, I think the museum does a great job - there is something for everybody, and I was impressed with how much time people spent reading the exhibits on the back wall. I think it is a great small museum. As I said earlier, I was impressed with the large number of visitors from other countries. I think it would be a good idea to post a sign about the availability of brochures in other languages - in all my time in the museum I did not see anyone ask for or take one of the brochures (though I have observed that at Ash Mountain).

I agree that more interactive exhibits would be good for children, though I never noticed any bored children anxious to get their parents to leave. I also think it would be good to fix or replace the sliding panels in the Land of Giants exhibit and replace the worn out pieces in the Tree Cross section. I should mention that I may have been at fault in not marking people as interacting with that exhibit because I did not consider it interactive (though people did try moving the plastic overlays).

I think the idea of having a tree that is not fenced near the parking lot for photos is a good one - better to have a spot where we are not so worried about vegetation than having people get in the habit of ignoring the signs. For visitors coming up the General's Highway, this is probably their first stop and they understandably want to get up close and touch a tree.

As far as future projects, I think even an amateur could make some worthwhile observations at one of the other visitor centers or on trails. I would try to add more observation points so that we are sure we were seeing interactions. I also think that before spending a lot of money on interactive exhibits it might be worth doing some observations on kids in the museum.